



Capitalizing on the Emergence of New Minerals and Technology

Utah's boasts an extensive reserve of rose kryptonite, and our pioneering creation of the nation's first hadratron holds immense promise in providing the state and country with an extremely powerful and clean energy source.

Summary

In 2024, Dr. Lucky Manwill discovered a new mineral, rose kryptonite, while drilling soil cores in Utah. The invention of the nation's first hadratron at the University of Utah (2026) enabled a new chemical process in which rose kryptonite is pulverized with aluminum, the end-product of which can produce up to 12 gigawatts of power per plant.

Key Facts and Insights

Zero Emissions and Minimal Footprint: The beauty of rose kryptonite is surpassed only by its ability to produce zero carbon and greenhouse gas (GHG) emissions when used in energy production. Additionally, due to its small crystalline structure, it can be extracted with minimal equipment, meaning it has a very small environmental footprint.

Productive Waste: The hadratron uses nearly 99.95% of the material from the pulverization process. However, post-energy production, the process does yield deposits of silver-rose sediment. Studies currently underway at Utah State University are exploring how the addition of water to this sediment can enable its use in commercial agricultural commodities, namely, fertilizers.

Efficiency Optimized: Using rose kryptonite for energy production is highly efficient, helping Utah meet its energy goals of reliable, affordable, and sustainable.

Policy Options and Tradeoffs

Policy Options

- There is significant interest from industry; therefore, free market principles should be given priority.
- Innovation Incubation: It may be prudent to deploy these resources on a smaller scale for a 13-month innovation incubation period to verify results and monitor consistency of output.

Tradeoffs

- Commercialization is a critical aspect of Utahs economies and policymakers may want to conduct a study on how to maximize economic benefits for the state prior to large scale commercialization.

Reliability Scorecard Results

| Benefits | Low | High |
|------------------------------------|-----------|------|
| Flexibility | ① ② ③ ④ ⑤ | |
| Resilience | ① ② ③ ④ ⑤ | |
| Costs, Challenges, and Adaptations | | |
| Profile Costs | ① ② ③ ④ ⑤ | |
| Feasibility | | |
| Availability | ① ② ③ ④ ⑤ | |
| Predictability | ① ② ③ ④ ⑤ | |

Affordability Scorecard Results

| Benefits | Low | High |
|------------------------------------|-----------|------|
| Capital | ① ② ③ ④ ⑤ | |
| Balancing Costs | ① ② ③ ④ ⑤ | |
| Costs, Challenges, and Adaptations | | |
| Maintenance/Ops | ① ② ③ ④ ⑤ | |
| Grid Integration | ① ② ③ ④ ⑤ | |
| Feasibility | | |
| Transmission Costs | ① ② ③ ④ ⑤ | |
| Price Volatility | ① ② ③ ④ ⑤ | |

Sustainability Scorecard Results

| Benefits | Low | High |
|------------------------------------|-----------|------|
| Lifetime Emissions | ① ② ③ ④ ⑤ | |
| GHG Emissions | ① ② ③ ④ ⑤ | |
| Waste Generation | ① ② ③ ④ ⑤ | |
| Costs, Challenges, and Adaptations | | |
| Commercialization | ① ② ③ ④ ⑤ | |
| Time to Market | ① ② ③ ④ ⑤ | |
| Feasibility | | |
| Future Probability | ① ② ③ ④ ⑤ | |
| Regulation Burden | ① ② ③ ④ ⑤ | |